



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,448	06/23/2005	Jean-Marie Bernard	1022702-000260	7767

21839 7590 10/03/2008
BUCHANAN, INGERSOLL & ROONEY PC
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

WINKLER, MELISSA A

ART UNIT	PAPER NUMBER
----------	--------------

1796

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

10/03/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary	Application No. 10/518,448	Applicant(s) BERNARD ET AL.	
	Examiner MELISSA WINKLER	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 August 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 31-47 and 49-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 31-47 and 49-55 is/are rejected.
- 7) ☒ Claim(s) 55 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 55 is objected to because of the following informalities: Claim 55 does not end with a period. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 31, 39 – 43, 47, 49 – 51, and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,374,976 to Blount.

Regarding Claims 31 and 39. Blount teaches a foamable/expandable composition comprising a polyamide and a polyisocyanate (Column 7, Lines 46 – 49). Organic polyhydroxyl compounds, preferably carboxylic acids, may also be used in conjunction with the polyisocyanate (Column 8, Line 49 – Column 9, Line 19).

Regarding Claims 40 and 41. Blount teaches the composition of Claim 39 wherein the polyisocyanate may be 2,6-toluene diisocyanate (Column 8, Lines 20 - 22).

Regarding Claim 42. Blount teaches the composition of Claim 39 wherein the polyisocyanate may be comprised of isocyanurate groups (Column 8, Lines 20 - 22).

Regarding Claim 43. Blount teaches the composition of Claim 31 wherein the polyisocyanate may be 2,6-toluene diisocyanate (Column 8, Lines 20 - 22).

Regarding Claim 47. Blount teaches the composition of Claim 31 wherein the organic polyhydroxyl compound may be adipic acid (Column 9, Lines 7 - 10).

Regarding Claim 49. Blount teaches the composition of Claim 31 may further comprise a surfactant (Column 13, Lines 60 - 62).

Regarding Claim 50. Blount teach a process for preparing a foam from the composition of Claim 31. The components of the composition are mixed and reacted at a temperature preferably in the range of 20 to 160°C (Column 15, Lines 50 – 52). After the reaction, the mixture is allowed to solidify/stabilize and foam into a cellular solid product outside the mixing apparatus (Column 15, Lines 44 - 50).

Regarding Claim 51. Blount teach the process of Claim 50 wherein the polyamide forms part of a liquid emulsion when heated to 60°C and, as indicated above, the polyamide may be reacted at a temperature preferably in the range of 20 to 160°C (Example 8 and Column 15, Lines 50 – 52).

Regarding Claim 53. Blount teaches the process of Claim 50 wherein a reinforcing filler, such as glass or wood, may be added to the foaming reaction mixture (Column 14, Lines 60 - 62).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,374,976 to Blount, as applied to Claim 31 above, and further in view of US 5,760,147 to Schönfeld et al.

Regarding Claims 32 and 34. Blount teaches the composition of Claim 31 but is silent regarding the linearity and molecular mass of the polyamide. However, Schönfeld et al. also teaches a polyamide foam prepared from a polyamide that is preferably linear and with a molecular weight of 5,000 to 70,000 (Column 1, Lines 22 - 45). Blount and Schönfeld et al. are analogous art as they are from the same field of endeavor, namely foam compositions containing polyamide useful, for example, as insulation. At the time of invention, it would have been obvious to a person of ordinary

skill in the art to use a linear polyamide with a molecular weight in the range taught by Schönfeld et al. in the composition taught by Blount. The motivation would have been that these polyamides are useful preparing foams serving as heat-resistant insulation (Column 3, Lines 32 – 33).

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,374,976 to Blount, as applied to Claim 31 above, and further in view of US 5,891,563 to Letts.

Regarding Claim 33. Blount teaches the composition of Claim 31 but does not teach the polyamide is one of the claimed polyamides. However, Letts teaches a polymer material containing a polyamide that is preferably polyamide 6,6. Blount and Letts are analogous art as they are from the same field of endeavor, namely foam compositions containing polyamide useful, for example, as insulation. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use polyamide 6,6 in the composition taught by Blount. The motivation would have been that that polyamide 6,6 has properties that would be desirable in an insulation foam, such as low air permeability and moisture resistance (Letts: Column 5, Lines 31 – 34).

Claims 35 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,374,976 to Blount, as applied to Claim 31 above, and further in view of US 5,959,069 to Glück et al.

Regarding Claims 35 and 37. Blount teaches the composition of Claim 31 but does not teach the polyamide is comprised of H-shaped macromolecular chains. However, Glück et al. teach a molding composition comprising H-shaped polyamides (Column 1, Lines 3 – 5). Blount and Glück et al. are analogous art as they are from the same field of endeavor, namely molding compositions comprising polyamides. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use an H-shaped polyamide as the polyamide in the composition taught by Blount. The motivation would have been that H-shaped polyamides have very good flowability under conditions of shear melt, as well as good mechanical strength (Glück et al.: Column 2, Lines 10 – 15).

Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,374,976 to Blount, as applied to Claim 31 above, and further in view of WO 99/03909 to Di Silvestro et al. For convenience, citations for WO 99/03909 are taken from the English-language equivalent of this document, US 6,867,256 to Di Silvestro et al.

Regarding Claims 36 and 37. Blount teaches the composition of Claim 31 but does not teach the polyamide is a copolyamide with a random arborescent structure. However, Di Silvestro et al. teach a molding composition comprising a polyamide with a random tree-type structure (Column 1, Line 30 – Column 2, Line 50). Blount and Di Silvestro et al. are analogous art as they are from the same field of endeavor, namely molding compositions comprising polyamides. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use a copolyamide with a tree-like structure as the polyamide in the composition taught by Di Silvestro et al. The motivation would have been that these copolyamides are easily prepared and have a high melt viscosity (Di Silvestro et al.: Column 1, Lines 24 – 26).

Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,374,976 to Blount, as applied to Claim 31 above, and further in view of WO 00/68298 to Bouquerel et al. For convenience, citations for WO 00/68298 are taken from the English-language equivalent of this document, US 6,872,800 to Bouquerel et al.

Regarding Claim 38. Blount teaches the composition of Claim 31 but does not teach the polyamide is a hyperbranched copolyamide. However, Bouquerel et al. teach a composition comprising a hyperbranched copolyamide. Blount and Bouquerel et al. are analogous art as they are from the same field of endeavor, namely compositions

comprising polyamides. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use a hyperbranched copolyamide as the polyamide in the composition taught by Blount. The motivation would have been that the globular structure of hyperbranched polymers gives them a lower viscosity in the molten state than that of linear polymers with the same molecular weight (Bouquerel et al. Column 1, Lines 24 – 29).

Claims 44 - 46 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,374,976 to Blount, as applied to Claim 31 above, and further in view of US 5,817,425 to Morishige et al.

Regarding Claims 44 and 45. Blount teaches the composition of Claim 31 but does not teach the isocyanate is protected with a protecting group. However, Morishige et al. teach a polyamide film onto at least one side is applied an adhesiveness-improving layer containing a cross-linking agent that may be a blocked isocyanate compound (Column 11, Lines 41 - 65). Specifically, the isocyanate may be blocked with ϵ -caprolactam (Column 12, Lines 54 – 66). Blount and Morishige et al. are analogous art as they are from the same field of endeavor, namely compositions comprising polyamide and isocyanate. At the time of invention, it would have been obvious to a person of ordinary skill in the art to prepare the composition taught by Blount with an

isocyanate blocked with ϵ -caprolactam. The motivation would have been that the blocked isocyanate provides advantages such as promoting cross-linking in the foam (Morishige et al: Column 11, Lines 56 - 66).

Regarding Claim 46. Blount teaches the composition of Claim 44 wherein the polyamide forms part of a liquid emulsion when heated to 60°C and, as indicated above, the polyamide may be reacted at a temperature preferably in the range of 20 to 160°C (Example 8 and Column 15, Lines 50 – 52).

Blount, in view of Morishige et al, are silent regarding the deprotection temperature of the isocyanate functions. Consequently, the Office recognizes that all of the claimed effects or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredient(s), i.e. a polyamide and isocyanate capped with caprolactam. Therefore, the claimed effects and physical properties, i.e. a deprotection temperature of the isocyanate functions greater than the melting point or softening point of polyamide B, would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,374,976 to Blount, as applied to Claims 31 and 50 above, and further in view of US 5,817,425 to Morishige et al.

Regarding Claim 52. Blount teaches the process of Claim 50 but does not teach the isocyanate is protected with a protecting group. However, Morishige et al. teach a polyamide film onto at least one side is applied an adhesiveness-improving layer containing a cross-linking agent that may be a blocked isocyanate compound (Column 11, Lines 41 - 65). Specifically, the isocyanate may be blocked with ϵ -caprolactam (Column 12, Lines 54 - 66). Blount and Morishige et al. are analogous art as they are from the same field of endeavor, namely compositions comprising polyamide and isocyanate. At the time of invention, it would have been obvious to a person of ordinary skill in the art to prepare the composition taught by Blount with an isocyanate blocked with ϵ -caprolactam. The motivation would have been that the blocked isocyanate provides advantages such as promoting cross-linking in the foam (Morishige et al: Column 11, Lines 56 - 66).

Blount teaches the reaction of the composition occurs at a temperature preferably in the range of 20 to 160°C (Example 8 and Column 15, Lines 50 - 52). However, Blount, in view of Morishige et al, are silent regarding the deprotection temperature of the isocyanate functions. Consequently, the Office recognizes that all of the claimed effects

or physical properties are not positively stated by the reference(s). However, the reference(s) teaches all of the claimed ingredient(s), i.e. a polyamide and isocyanate capped with caprolactam. Therefore, the claimed effects and physical properties, i.e. a deprotection temperature of the isocyanate functions greater than the melting point or softening point of polyamide B, would implicitly be achieved by a composition with all the claimed ingredients. If it is the applicant's position that this would not be the case: (1) evidence would need to be provided to support the applicant's position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain the claimed properties with only the claimed ingredients.

Claim 54 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,374,976 to Blount, as applied to Claims 31 and 50 above, and further in view of US 4,028,287 to Sato et al.

Regarding Claim 54. Blount teaches the process of Claim 50 but is silent regarding the density of the foam product. However, Sato et al. teach a polyamide foam prepared with a density ranging from 0.038 to 0.368 g/cm³ (Column 8, Line 46 – Column 9, Line 15). Sato et al. also state that the amount of blowing agent/foaming agent can be modified to achieve a desired density in the foam (Column 4, Lines 60 -

62). Blount and Sato et al. are analogous art as they are from the same field of endeavor, namely polyamide foams. At the time of invention, it would have been obvious to a person of ordinary skill in the art to prepare the foam taught by Blount at a density in the range taught by Sato et al. The motivation would have been that a foam density in this range would be low enough to be useful in commercial applications, such as insulation.

Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,374,976 to Blount in view of US 2003/0173707 to Becker et al.

Regarding Claim 55. Blount teaches a foamable/expandable composition comprising a polyamide and a polyisocyanate (Column 7, Lines 46 – 49).

Blount does not expressly teach the polyamide is comprised at least one acid function. However, Becker et al. teach a method of making a polyamide such that its ends terminate with carboxyl groups (Paragraph 33). Blount et al. and Becker et al. are analogous art as they are from the same field of endeavor, namely polyamide compositions. At the time of invention, it would have been obvious to a person of ordinary skill in the art to use a carboxyl-terminated polyamide in the composition taught by Blount et al. The motivation would have been that the presence of carboxyl

groups would provide advantages such as increasing the reactivity of the polyamide with the polyisocyanate present in the composition.

Response to Arguments

Applicant's arguments filed August 20, 2008 have been fully considered but they are not persuasive because:

A) Regarding applicant's argument that the claims are not anticipated by Blount because Blount discloses a polyurethane foam whereas applicant discloses a polyamide foam, the instant claims are directed to a composition and not to a foam.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (MPEP 2131) Though the current amendments to the claims set forth the composition is a polyamide composition, Blount teaches a composition with the required three components set forth in Claim 1. Thus, though Blount does not refer to the composition as a polyamide composition, it is the Office's position that the disclosure of Blount nonetheless anticipates the composition set forth in the instant claims.

B) Regarding applicant's argument that Blount does not teach using a compound having at least one acid function in the composition, Blount teaches organic polyhydroxyl compounds, preferably carboxylic acids, may also be used in conjunction with the polyisocyanate (Column 8, Line 49 – Column 9, Line 19). These polyhydroxyl compounds are different from the carboxylic acids, designated as component (c), used to prepare the polyamides (Column 7, Lines 20 – 45).

C) Regarding applicant's argument that Sato et al. teaches away from the three component system taught by applicant, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). The teachings of Sato et al. are relied upon for what they suggest regarding the density of foam products rather than what they suggest about catalysts.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA WINKLER whose telephone number is (571)270-3305. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo, Ph.D./
Supervisory Patent Examiner, Art Unit 1796
29-Sep-08

MW
September 24, 2008